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IV.—*Notices of the Mendoza Earthquake. Visit to the Patagonians.* By Dr. CADDY, Surgeon Royal Navy.

[*Read Jan. 23rd, 1866.*]

THE 13th of April, 1861, Her Majesty's screw corvette *Pylades*, of twenty-one guns, reached the open roadstead of Valparaiso, being homeward bound, in the fourth year of the ship's commission.

The great absorbing topic of the day was the destruction by earthquake of the picturesque city of Mendoza, in the eastern slope of the Andes, a distance in a direct line of a hundred leagues from Valparaiso.

The few particulars gleaned of the Mendoza calamity have their ethnological value, and may teach us how to anticipate and provide against such contingencies, in so far as human foresight can. A hurried dispatch from Mendoza had been received by the Chilian authorities, for all the medical men and surgical appliances at command. Mr. Leahy, then assistant-surgeon of Her Majesty's storeship *Nereus*, at Valparaiso, had gallantly volunteered his services, and started on his humane mission in concert with other medical men. The inhabitants of Valparaiso, numbering 100,000, were under serious alarm at the frequent warnings of earthquakes on this coast. The storehouses of this rapidly rising commercial city are built very lofty, from the increased value of building ground. The residences of the merchants and the well-to-do have a pretty suburban appearance on the hills, overlooking the lowland or commercial streets. Every information was anxiously looked for at this period. Two letters from Mr. Leahy are here inserted.

“Mendoza, 7th April, 1861.

“We arrived here at daylight, on Saturday morning, after a most tedious journey,—cold, snow, subsequently heat, dust, and hunger enough to damp one's ardour. In the Cordilleras we experienced shocks of earthquakes almost daily. Here at Mendoza they occur severely several times a day, but we do not fear much, as we are living in the open air; not a single house, even a wall being left standing. The very ground in this locality has large fissures and holes in it from the recent convulsion. There is a report of a volcano having burst forth from one of the hills three leagues distant.

“Before this terrible earthquake, the city of Mendoza and the

surrounding neighbourhood had a population of fifteen thousand, of whom between eight and nine thousand are dead. There are about one thousand wounded, many serious cases, chiefly compound fractures of the legs. We are establishing a field hospital close to the town. The situation we have chosen is salubrious, but we have many difficulties to contend with, there being no government resident, the person holding that office having fled, through fear of being shot on account of his disgraceful conduct. We have some little assistance from the very few respectable inhabitants left. Drs. Dias, Bates, and myself, have divided the city into districts, but we cannot attend to all. There are over twenty cases awaiting operation to-morrow, by which time there will have arrived as many more. We are sent for in all directions, but cannot go far on account of the loss of time involved. We have an apothecary and three dressers, who behave admirably. In the hurry of leaving Valparaiso, I wholly forgot my own personal wants, namely, bed, soap, and towels. Nothing here is to be had. I am content to rough it, and to be useful with so much suffering and disaster around me."

"Mendoza, 12th April, 1861.

"I take the opportunity of a special post leaving to-morrow morning for Santiago, to state that we are heavily pressed with hard work. The wounded are coming in every hour. Since my last letter of the 7th of April, I have been early and late constantly at work. It is almost incredible, the multitude of dead and dying who surround us on all sides. I am writing by moonlight for want of candles."

Mendoza is in south latitude $32^{\circ} 52'$ and west longitude $69^{\circ} 60'$, at an altitude of 4,891 feet above the level of the sea, and in a small sheltered plain at the foot of the snowy Andes, where thrive vineyards, wheat crops, potatoes, and tobacco.

Her Majesty's ship *Pylades* left Valparaiso the 1st of May, having experienced rather early in the season a severe northerly wind with a heavy swell, rendering the anchorage, from its mass of shipping, anything but secure. Luckily I met Mr. Leahy the last day of April, and he kindly favoured my numerous queries, general and professional. There was abundant medical assistance at Mendoza, medical men having come from Buenos Ayres. Mr. Leahy had returned as soon as he could be spared; for a few days in advance of his leaving Mendoza, the Cordilleras would have been impassable from the fall of snow, and he would have been cut off from Valparaiso for some months.

Mendoza by road is 327 miles from Valparaiso. The first impression of Mendoza was a level of ruins with croppings out of trees and shrubs from various gardens. The shaking destroyed the buildings most completely, but patches of garden land re-

mained where there had not been rents or fissures through the convulsion. Mendoza, before this calamity, was a pretty city, with its streets built at right angles, and having its array of church steeples and lofty buildings. The resting-place of the survivors was in the suburbs of the city under the shade of the trees, the majority being severely wounded. With injury of the head, there was one case of locked-jaw. There were very many fractured collar-bones, some with much displacement, partial union having taken place. These injuries followed from the exposed position of the clavicles to the falling of the masonry and the timber of the buildings. In some of the compound fractures of the lower extremities, the protruding bones were seen, from long exposure, as white as a scrubbed deal board. There was no pyæmia with these injuries, and during Mr. Leahy's tour of duty but one case of secondary hæmorrhage after amputation. The dry climate and season of the year favoured the healing process and did not court erysipelas and allied blood ailments. In this earthquake there was a terrible destruction of little children and of females, as the former were in bed, and the adult women in their houses, when the city was levelled at half-past nine at night, the 20th of March, 1861.

Some six hundred young ladies are said to have perished; so say the surviving young men, who mourn the loss of their dearest relatives and many of them their sweethearts and intended wives. Numbers are said to have been buried alive and there to have died miserably. Had the authorities at first commenced lifting the ruins, searching out these underground prisons, many lives would have been saved. The circumstances were new to the people in power, and the governor not the right man in the right place.

The accidental circumstances of getting reliable observations and clear weather enabled the *Pylades* to enter the Straits of Magellan, bidding our adieu to the South Pacific Ocean. The difficulty is in foggy weather to hit the passage; if this is made out, inside will be found smooth water and clear weather. The straits are about three hundred miles long, and vary in width from one and a half to thirty miles; at the entrance from the Pacific, about eleven miles in width; and our first anchorage was at Point Palmer, somewhat horse-shoe shaped. The land on either side was one irregular mass of barren, weather-beaten, rounded-looking rocky hills of granite and sandstone, with generally a precipitous cliff to the water's edge. Behind these rocky barriers were seen deposits of snow, in a few places glaciers. But few birds were to be seen on the wing. We were well protected from the prevailing squalls, which came over the tops of the bare mountains with great fierceness. A boat from the *Pylades* was pulled around this anchorage. Some seals and divers were

seen ; the water-side jungle found very thick, and the common holly in plenty with its well-known red berries. From the ship the stunted vegetation appeared to clothe for a short distance the sides of the mountain spurs, leaving their semi-rounded or irregular summits bare and bleak looking.

From Point Palmer, the next anchorage was at Fortescue Bay which, like the former, was on the mainland, the northern side of the Straits. A Chilian Government schooner was here at anchor awaiting a fair wind to the Pacific Ocean for Valparaiso, her freight being Chilian soldiers and their families. These, however, had landed on the beach and had their tents and camp fires. Here the hills and mountains to the north were clothed with what appeared cedar trees of small size. An inlet from the straits passed up to a morass, through which ran three small fresh-water rivulets. Here wild duck were found in numbers, reminding the visitors of the chorus of a farm yard. A gun in some little ambush at each stream would have kept the birds on the wing and procured a good bag, the ducks usually flying from one rivulet to the other but not relinquishing the morass.

Late in the dark, thick, misty evening, some Tierra-del-Fuegians visited the *Pylades* ; they had a fire burning in their canoe, three undersized men and one woman constituting the party. Poor souls, they came on board for what they could get, and their creature comforts were well cared for. They were speedily dressed in cast off uniform, the glitter of tarnished gold lace by candlelight not escaping notice. The lady of the party was clothed by the sailors and marines in pantaloons and jacket, the headdress being an uniform cap from the gunner. She was more than pleased at having her toilet adjusted,—affording some merriment in her attempts, whilst hopping on one leg, to pass the other limb down the leg of the trousers, which garment was too long, the entire Indian party laughing most heartily at the exhibition. The finale being that the sable lady tired of the goose-step, sat on the deck, when two gallant men of war's men, kindly and with every propriety, passed her legs through the trousers, extemporised suspenders, and enabled her to parade in her new costume, in which she appeared perfectly at her ease.

The features and general appearance of these Indian visitors reminded me much of those Indians I had seen at Vancouver's Island, on the west coast of Mexico, and at Nova Scotia. They had nothing to barter, their craving being for rum, biscuit, and tobacco. Their primitive clothing being deer-skins over the shoulders and loins; their legs were bare; their hair long, straight, and coal-black ; their eyes jet-black. They had a decided talent for imitation, repeating words addressed to them. They knew a little Spanish, which they had picked up in their intercourse

with the Chilians. One of our officers bawled in the ear of an Indian, which the Indian immediately returned with a two-fold vocal blast. At a former visit of one of our ships of war, some of this tribe of Indians ventured within the midshipmen's mess. One of the midshipmen, as the Indian interpreted it, was ridiculing him, when the Indian immediately threw one of Her Majesty's hard biscuits at his head.

From Fortescue Bay, the next move was to the Chilian settlement at Sandy Point. We here observed, as we anchored about one mile and a half from this northern shore, a cluster of white-washed wooden houses, a church, the ground on a belt of lowland bearing evidence of cultivation. The governor at this station was a Danish gentleman in the Chilian service, and came on board to call on the captain, being rowed off by four Chilian soldiers. I visited the shore, the establishment consisting of the governor, a surgeon, a lieutenant in command of some fifty soldiers, their wives and children, some artisans; there was a good assemblage of boats at the water-side under cover. Three very tractable llamas were shown me within a high fence: they had been brought there very young by the Patagonian Indians.

Dr. Burns, the resident surgeon, informed me that the settlement was very healthy, that infants and older children did well. That the highest of the thermometer in the shade was 75°, the lowest in the winter months 22°. That the agriculture of the settlement was in its infancy, barley and oats ripened, but wheat was most capricious. The potatoes were large, but a little watery. Garden produce succeeded, wild currants and raspberries were plentiful. Nearly everything that had been tried gave promise and encouragement, and having such a rich black mould on which to experiment was in favour of future excellent supplies. There was grass throughout the year, the sheep, cows, and horses kept in good condition. The prevailing timber around and to the north of the settlement was white cedar. The small river streams from the melting snow fluctuated with the changes of the seasons, but contained no fish. Deer were very plentiful in the woods, and were easily captured with the aid of dogs and the lasso. The nature of the soil here, and the general features of the lowlands, reminded me of Burnard's Inlet, to the north of the Fraser River, which at the period of our visit in 1839, had been but little known to the woodman's axe. In the months of February and March, Dr. Burns told me there was excellent snipe shooting. I had hoped the month of May not too late for a few birds; but I was much disappointed in walking the finest sporting land I had ever fallen in with, not being too wet nor treacherous travelling. I had traversed similar looking ground skirting the harbour of Petropolousky in 1855, the year after the disastrous attack of

the French and English forces on this fur-trading and fishing settlement.

The future of the Chilian settlement in the Straits of Magellan is to be considered as most favourable. Within two leagues from the shore is coal (lignite) in abundance, fit for steamers. From this depôt of wealth, there is a gradual incline to the water-side, well fitted for a tramway. No gold had been discovered, though from the geological formation its presence is conjectured. If the precious metals are found, it will bring forward this hitherto but little frequented region. The wild flowers in the spring are very numerous, with sweet perfume, the colour of yellow prevailing.

The next and last anchorage visited before entering the Atlantic was at Point Gregory, where there was a camp of some five hundred Patagonians, who had hoisted the Chilian flag. The governor at Sandy Point had informed me, that in the measurement of a hundred of these aborigines, their average height was six feet four inches by Spanish measure, which is in each foot a little beneath the English twelve inches. At Point Gregory commence those vast grassy plains, or pampas, which extend more or less to Buenos Ayres, the Chilian Government claiming territory up to the Rio Negro.

The Rev. Samuel Beal, Chaplain of the *Pylades*, who had visited Japan, recognised in the manner, stature, and physiognomy of the Patagonians, a very marked resemblance to the Ainoes of Japan. The Ainoes being the large muscular men (a distinct race in Japan) who are called on to perform those feats of strength in the presence of foreigners, the general part of a Japanese entertainment.*

The Patagonian men ride on horseback with much ease, and pursue the chase in this way—getting on horseback by vaulting on the saddle. The women ride as the men do, and some of them exhibited the facility with which they could leap from behind the horse to its back. Primitive spurs were worn on both heels, these being used to quicken the pace of the animal, but not the whip.

The camp tents were covered with the skins of animals. The usual clothing of the upper part of the body were the skins of young llamas stitched into robes of six feet square. Their great cravings were for biscuit and rum. The men had on Hessian-looking boots of untanned leather; the ladies paraded barelegged.

At first view of the ship visitors, as they entered the wardroom,

* . . . "The attention of all was suddenly riveted upon a body of monstrous fellows—professional wrestlers; they were men enormously tall in stature, and immense in weight of flesh. Their great muscles rose with the distinct outlines of the sculptured form of a colossal Hercules."—Commodore Perry's "Expedition to Japan and the China Seas", p. 430.

they looked the giants, the monsters of men, my boyish days had depicted, in reading the fictions of *Jack the Giant-Killer*. The chief of the party had strongly-marked Indian features with expanded nostrils and thick lips, a blacker skin than his companions. Some of the other men had pleasing profiles, with dark copper-coloured complexions; their hands and feet were well formed; their straight, long hair, and eyes the coal-black of the Indian; their voices were deep and sonorous; their chests very capacious; their arms long and very powerful at the shoulder-joints; their teeth white and good, though living constantly on flesh. The chief understood Spanish, so that the party was soon at home. His headdress was a cloth cap, the substitute for a gold band being the polished brass hoop of some water firkin.

The women seen were, in proportion, as large as the men, the elder ladies being very corpulent; only one of the lean kind was remarked, she being very tall and antique-looking: these veteran dames preserved their full complement of white visible teeth. Both men and women were observed to be very dirty. A missionary (German by birth) had been among these aborigines, from some London society, and had been kindly treated and respected. I had hoped to meet him, but this gentleman was at the Falkland Islands waiting an opportunity again to join them. These people said they numbered between two and three thousand. They moved from one hunting ground to another on their horses. I was informed that the painting of their faces was a protection against the cold. Firearms were among them, and numerous dogs, but their native way of procuring their supplies of Guanacha meat was by the "bolos" or balls, which bolos being united by about two feet in length of the dried and twisted tendons of the ostrich, are slung at the llama, the object being to entangle the legs of the animal. One of the balls is of lead about the size of a duck's egg, of a similar oval shape; the other about the same diameter, of hard wood.

15th May, 1861. We were once more in the South Atlantic, our position at noon being in south latitude $50^{\circ} 24'$, west longitude $64^{\circ} 41'$, bound for the beautiful harbour of Rio Janeiro.

Our visit to the South American continent suggests some reflections on the future of the colonies of old Spain. Since their independence, the emigration from the mother country has been very limited. In these colonists there is a great admixture of Indian blood with a large majority of the population. Their unsettled governments, as is evidenced by recurrent revolutions, are against a progressive nationality. With the progress, the intelligence, the resources of the Anglo-Saxon race, its yearly tide of European emigration, the Spanish descendants cannot be expected to compete. At present, in the New World, inclusive of the New

Hebrides, there are over thirty millions of the first commercial race in the world speaking the English language, destined to people and govern from north to south.

In the centre of the Straits of Magellan has been laid the first gatherings of a young colony. The earth can here furnish its supplies and the sea its fishes. With the view of multiplying man's resources, it has appeared to me that these land-protected straits are fitted for introducing members of the salmonidæ family south of the equator, and such a project would be worthy of our enterprising Californian cousins with the youthful republic of Chili. The progress of this settlement is essential to the existence and elevation of the aborigines to be found here.

In the writings of the Old Testament it is recorded that giants existed, and it is certain that an interesting race of very large men are isolated in Japan and in Patagonia. Their historical antecedents are almost unknown. The nomadic state of the Patagonians cannot be much lower. Some of the Indian tribes of the west coast of America, especially under the Hudson Bay Company's humane guidance, have furnished trusty servants, artisans, and agricultural labourers.

The future of these red races bordering the Straits of Magellan is intimately linked with missionary influence and commercial progress, whereby they may be hoped to have the security of some settled industry, and become, according to their capacity and means of grace, worthy members of the Christian community.
